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Chicago Summit Generates Possible Solutions to Exchange of Harmful Invasive Species in Midwestern Waterways

Leading experts seek to stop Asian carp, zebra mussel and other species from endangering Great Lakes and Mississippi River basin ecosystems

CHICAGO (May 22, 2003) – Nearly 70 top scientists, engineers and invasive-species experts from around the globe gathered in Chicago last week to generate ideas for halting the exchange of invasive species between the Great Lakes and Mississippi River drainage basins. According to these experts, invasive species are the greatest threat to both the economy and ecology of the Great Lakes and are responsible for $137 billion a year in economic losses nationwide.

Convened by Chicago Mayor Richard M. Daley, the Chicago Department of Environment and the U.S. Fish and Wildlife Service, the Aquatic Invasive Species Summit was designed to introduce the diverse experts to the Chicago region's manmade waterway system, and to have them brainstorm solutions to the transport of invasive species through those waterways.

Non-native species threaten native species. More than 160 non-native species now live in the Great Lakes drainage basin, and nearly the same number live in the Mississippi River drainage basin. These two basins are connected by the Chicago Sanitary and Ship Canal and the Cal-Sag Channel (CSSC), which together constitute a "revolving door" for invasive species.

"The longer you put off solving a problem, the more it costs you in the long run. An aggressive solution to a problem is almost always cheaper than repairing the damage later," said Mayor Daley, who recently launched a comprehensive water agenda initiative that includes protecting the Great Lakes from harmful invasive species. "Sometimes we have to be bold about it and not be afraid of taking some active steps protecting us against invasive species." The Mayor pointed out that over the last 40 years, a newly established population of invasive species has been found in the Great Lakes every eight months.

"We are under attack from biological invaders ranging from microbes to mammals that threaten our heritage and our health," said Robyn Thorson, regional director of the U.S. Fish and Wildlife Service. "I believe the threats from invasive species constitute the most important and urgent environmental challenge of the 21st century, certainly for our region and perhaps for the planet."

Researchers ticked off a range of startling facts about the aquatic invasive species problem:

- More than half of the United States is impacted by the zebra mussel. Introduced into the Great Lakes via ballast water in 1988, the invader spread via the CSSC to the Mississippi River and other Midwestern river systems to 28 states. Annual costs associated with removing zebra mussels from water intakes and other structures total $250 million.

- Asian carp, which are traveling up the CSSC from the Mississippi River, are within several miles of Lake Michigan and along with other invaders could severely impact the $4.5 billion commercial sport and fishing industries in the Great Lakes. These species eat much of the same food as desirable, native fish, so competition with Asian carp threatens the abundance and even the existence of native fish species.

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- There are nearly 40 native mussel species in the Mississippi River from the headwaters in Minnesota to southern Illinois, some of which are federally threatened or endangered. Others are dwindling in numbers due to habitat decline. The zebra mussel threatens these species with extinction. And the quagga mussel, introduced into the Great Lakes in 1989 and now within 50 miles of the CSSC, could further impact them or hasten their extinction – threatening the biodiversity that is so important to a healthy region.

An experimental electric barrier designed to repel fish has been operating in the CSSC for roughly a year. While it is helping to slow the advance of invasive species, it does not prevent the exchange of all species and life stages. For example, plankton and species in immature life stages can still cross the barrier. The barrier has a maximum service life of three years; a second barrier will be in place by fall 2004. Members of the Illinois Congressional Delegation, particularly Sen. Richard Durbin and Rep. Judy Biggert, have been instrumental in helping to secure funding for these barriers. Mayor Daley has strongly supported these efforts as well.

Possible Solutions

The broad range of summit participants agreed that there needs to be a more proactive, decisive approach to solving the exchange of aquatic invaders between the Great Lakes and Mississippi River basins. They generated four general ideas for solving the problem; some are short-term, others are more long-term. All require significant research into effectiveness and feasibility. They are:

- Physical barriers at one or more locations in the Chicago Waterway System to physically separate Lake Michigan water from canal water;
- Technological barriers, using electrical or acoustical technologies for instance, to deter fish and other aquatic life from advancing;
- An eradication zone, which would be a stretch along the canal where methods such as removing oxygen from the water or other technologies would eradicate aquatic life from the water;
- A filter or bypass system, which would either filter aquatic life from the water or divert the organisms into a chamber where they would be eradicated.

Summit participants also agreed for the need to engage a broad audience and diverse interests, such as commercial navigation and recreational boaters, in devising and implementing a solution. They have begun to develop an action plan for cultivating partnerships; facilitating research; and pursuing financial, political and technical support to address short-term and long-term management of the problem.

Sponsors of the Aquatic Invasive Species Summit were the City of Chicago Department of Environment, the U.S. Fish and Wildlife Service, Illinois-Indiana Sea Grant, and the University of Wisconsin Sea Grant Institute. Additional sponsors and contributors included the U.S. Environmental Protection Agency, the Metropolitan Water Reclamation District of Greater Chicago, the Mississippi Interstate Cooperative Resource Association, the U.S. Army Corps of Engineers – Chicago District and Waterways Experiment Station, the International Joint Commission, and the Great Lakes Commission.

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